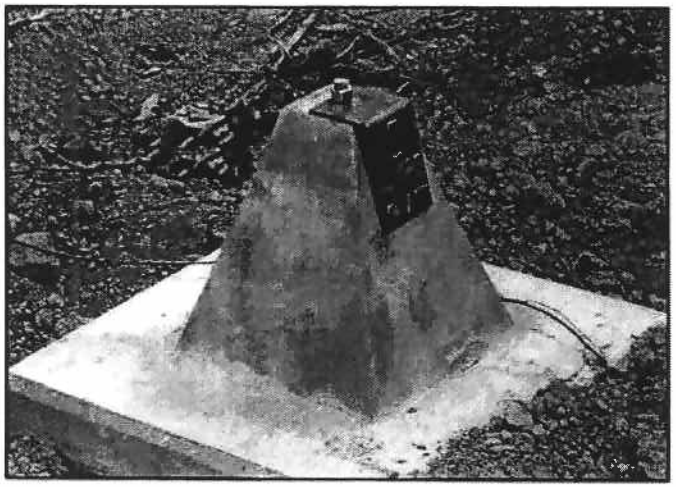
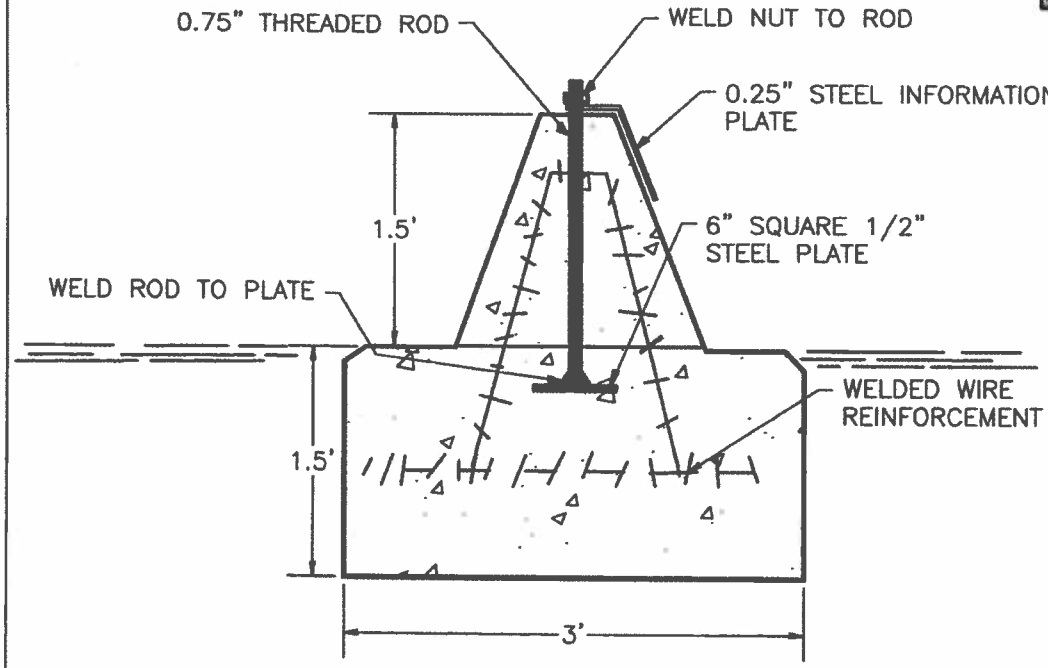
PORTAL

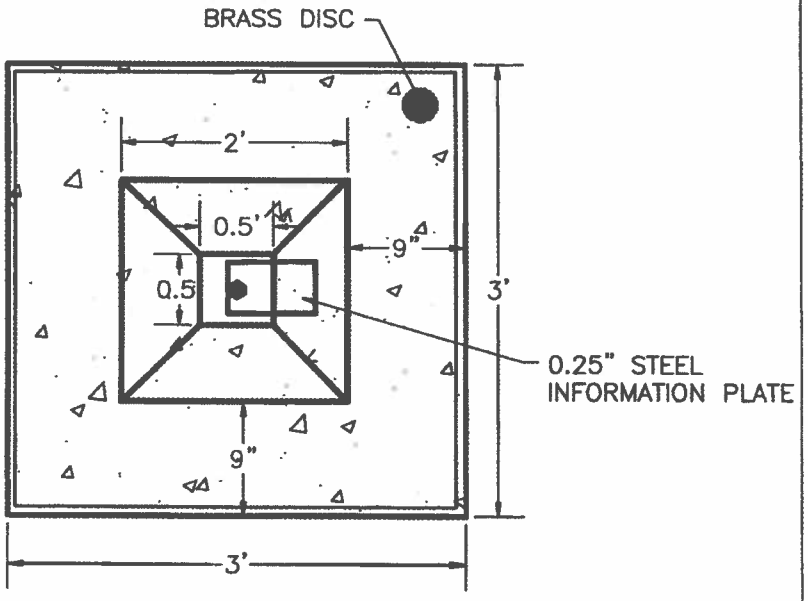
CLOSURES



NOTE: INFORMATION TO BE DISPLAYED ON STEEL PLATE SHALL BE PROVIDED TO THE CONTRACTOR Y THE ENGINEER.



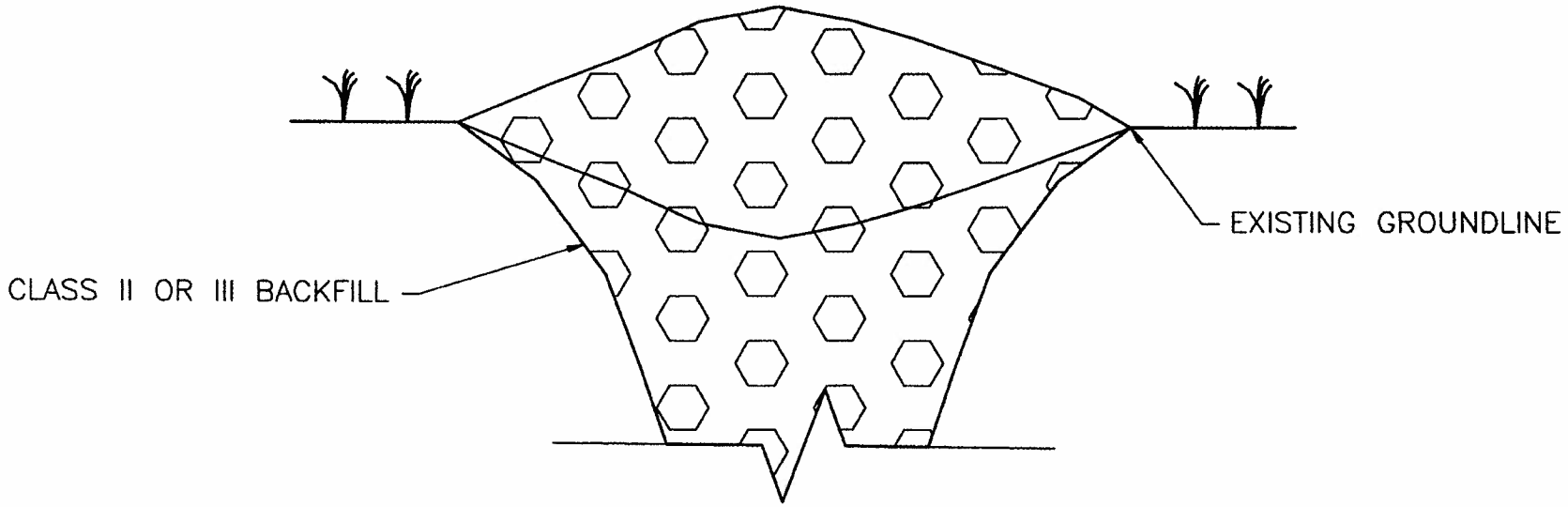
SIDE VIEW



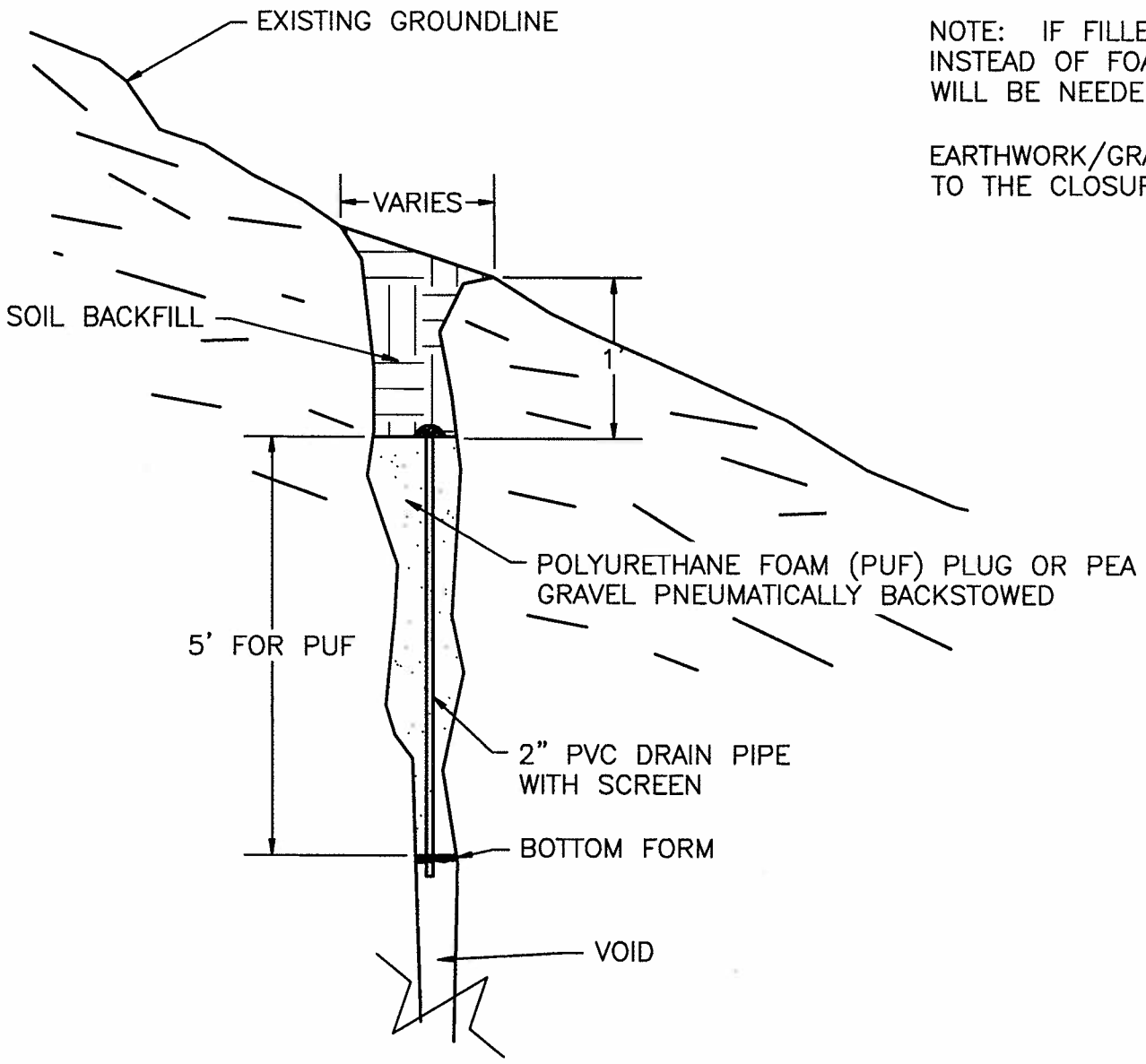
PLAN VIEW

CONCRETE MINE SHAFT MONUMENT
AMLPC 1

REMOVE DEBRIS PRIOR TO BACKFILLING



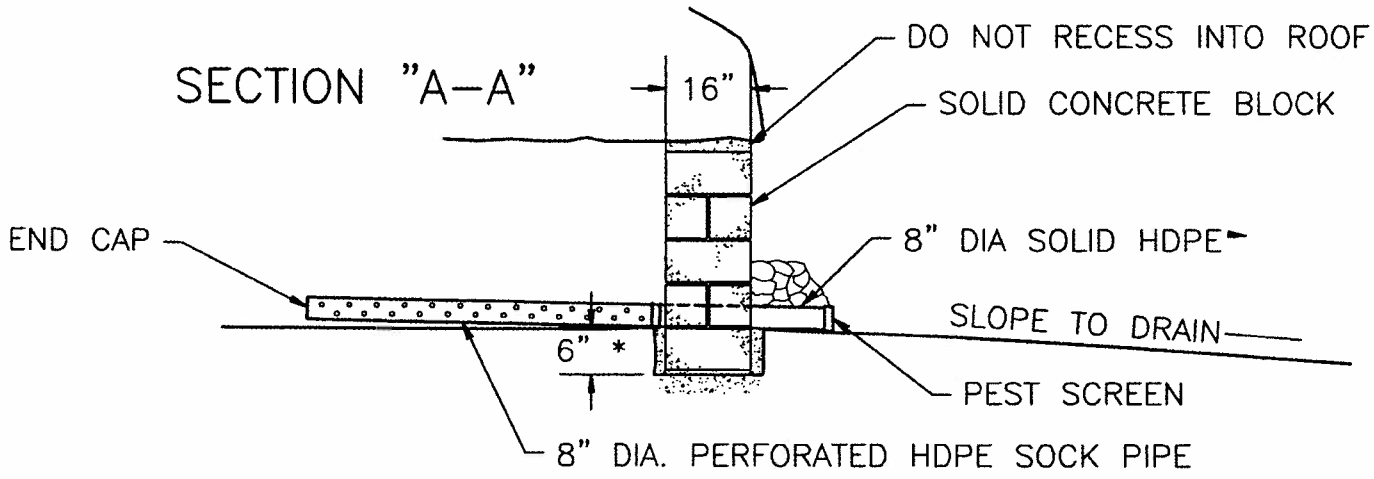
SUBSIDENCE AND MINE SHAFT BACKFILL
AMLPC 2



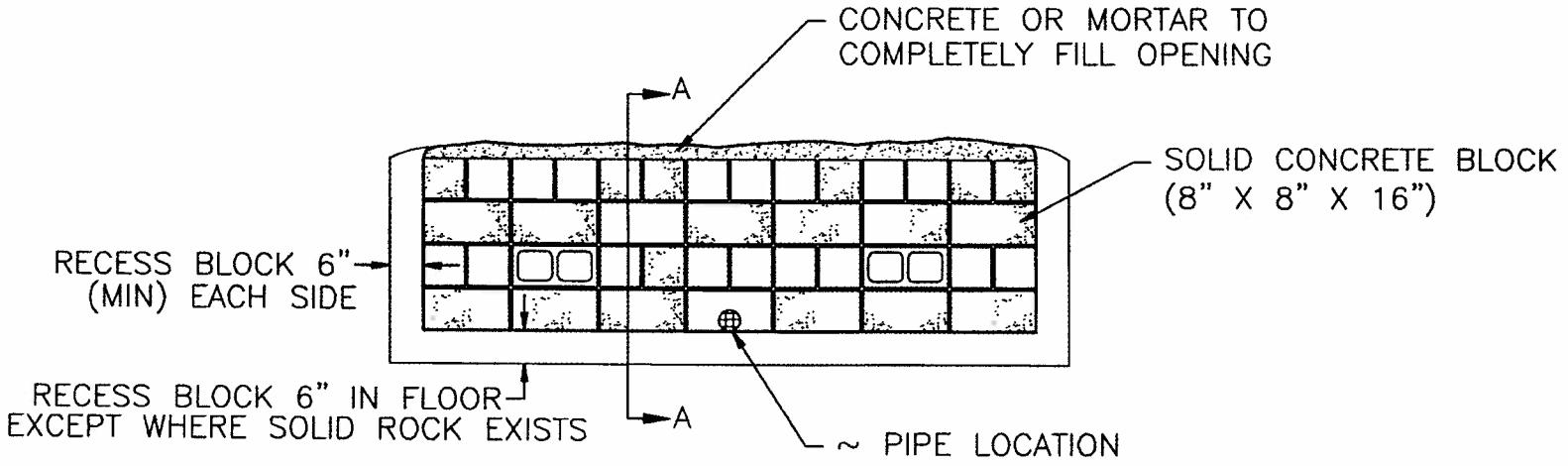
NOTE: IF FILLED WITH PEA GRAVEL INSTEAD OF FOAM, NO BOTTOM FORM WILL BE NEEDED.

EARTHWORK/GRADEWORK IS INCIDENTAL TO THE CLOSURE.

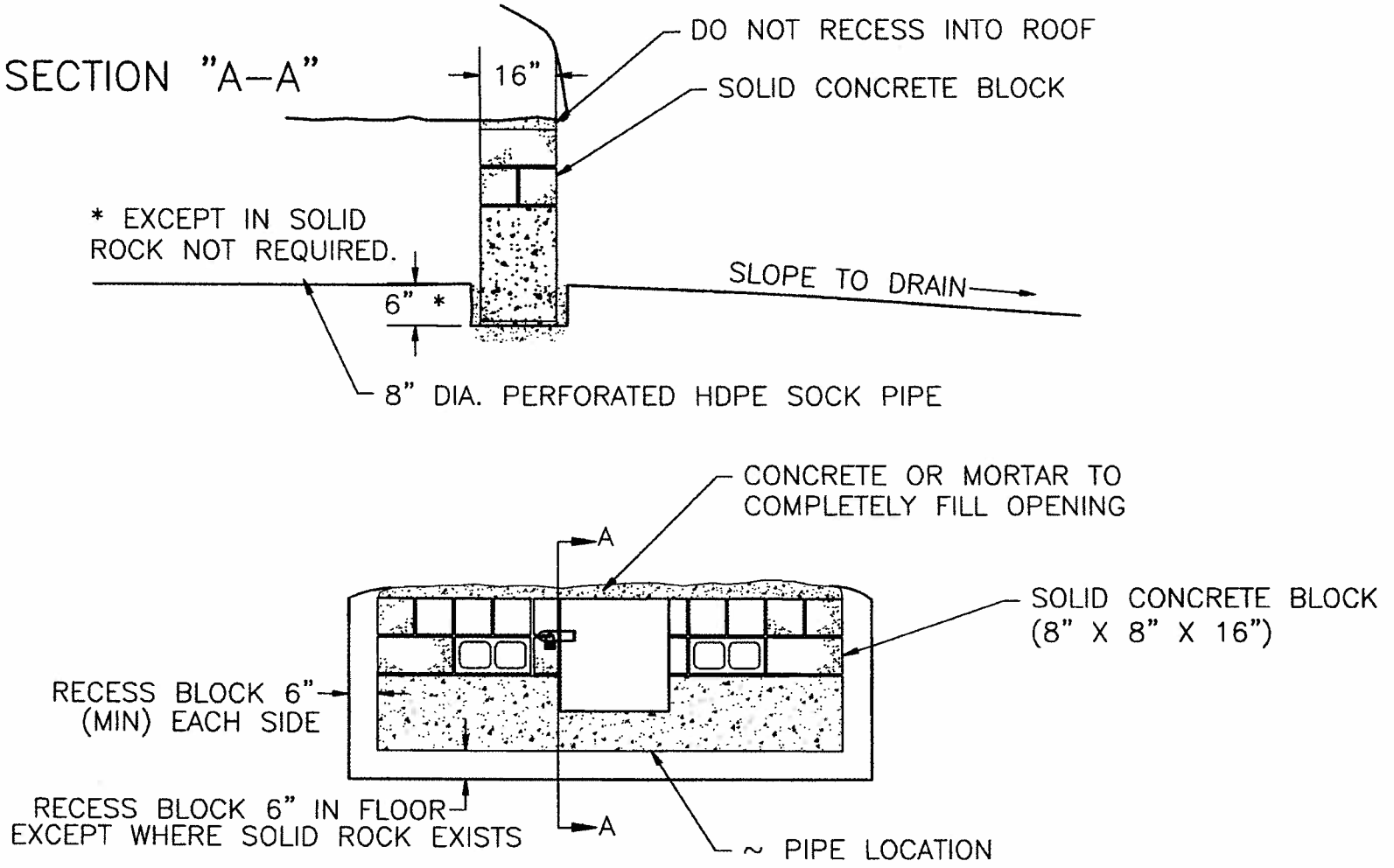
MOUNTAIN BREAK BACKFILL
AMLPC 3



* EXCEPT IN SOLID ROCK NOT REQUIRED.



CONCRETE BLOCK CLOSURE
AMLPC 4



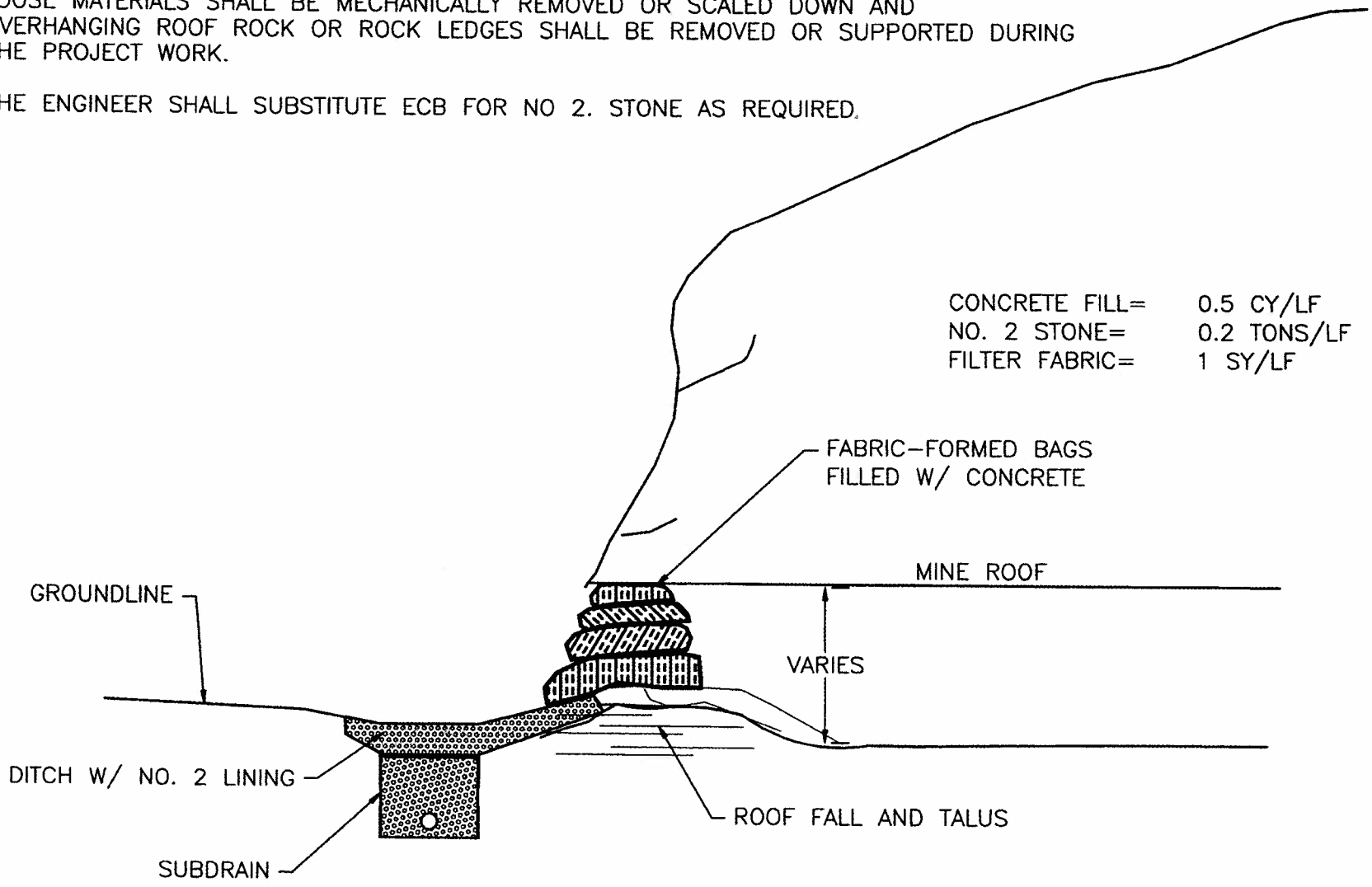
CONCRETE BLOCK CLOSURE WITH HUMAN ACCESS
AMLPC 5

NOTES:

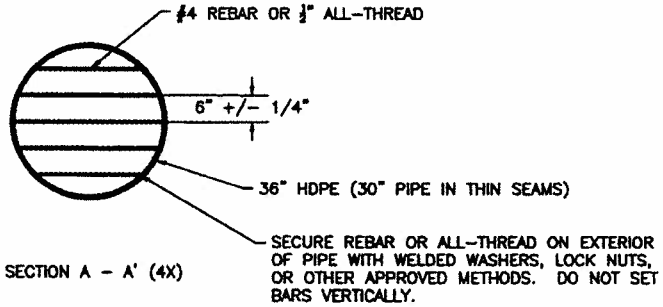
1. BOTTOM OF SUBDRAIN SHALL BE INSTALLED BELOW THE FLOOR OF THE COAL SEAM. A ROCK TOE BUTTRESS SHALL BE CONSTRUCTED AT OR BELOW THE EXISTING GROUND.

2. BEFORE ENTERING THE HIGHWALL WORK ZONE, THE WALL SHALL BE VISUALLY INSPECTED. LOOSE MATERIALS SHALL BE MECHANICALLY REMOVED OR SCALED DOWN AND OVERHANGING ROOF ROCK OR ROCK LEDGES SHALL BE REMOVED OR SUPPORTED DURING THE PROJECT WORK.

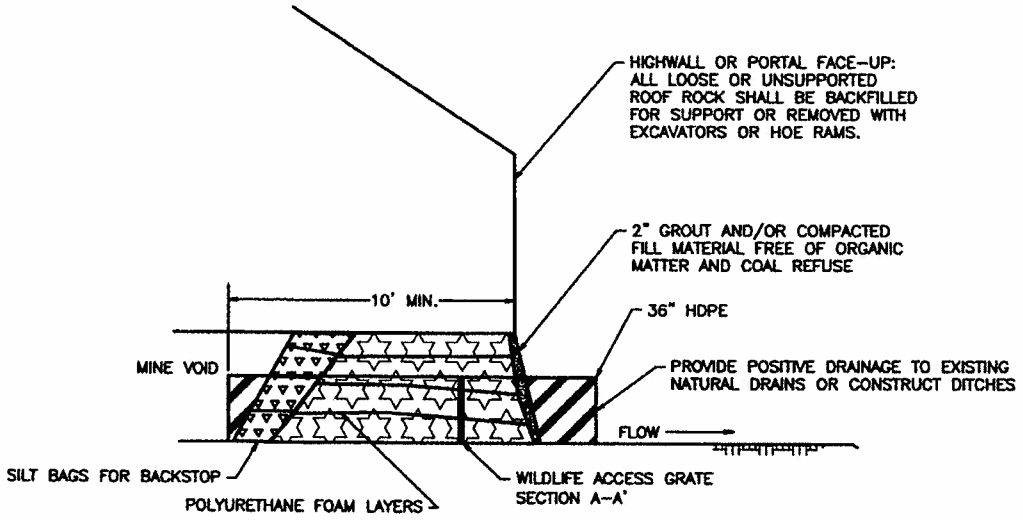
3. THE ENGINEER SHALL SUBSTITUTE ECB FOR NO 2. STONE AS REQUIRED.



FABRIC FORMED CONCRETE CLOSURE
AMLPC 6



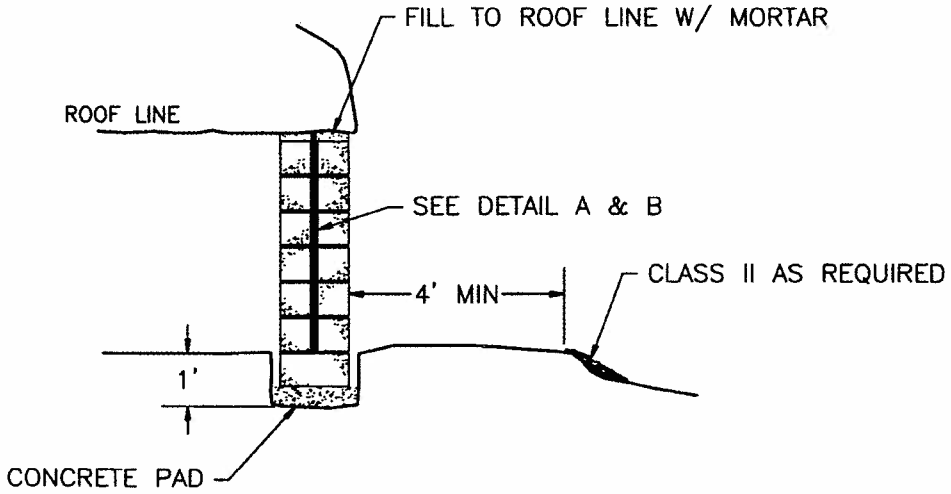
SECTION A – A' (4X)



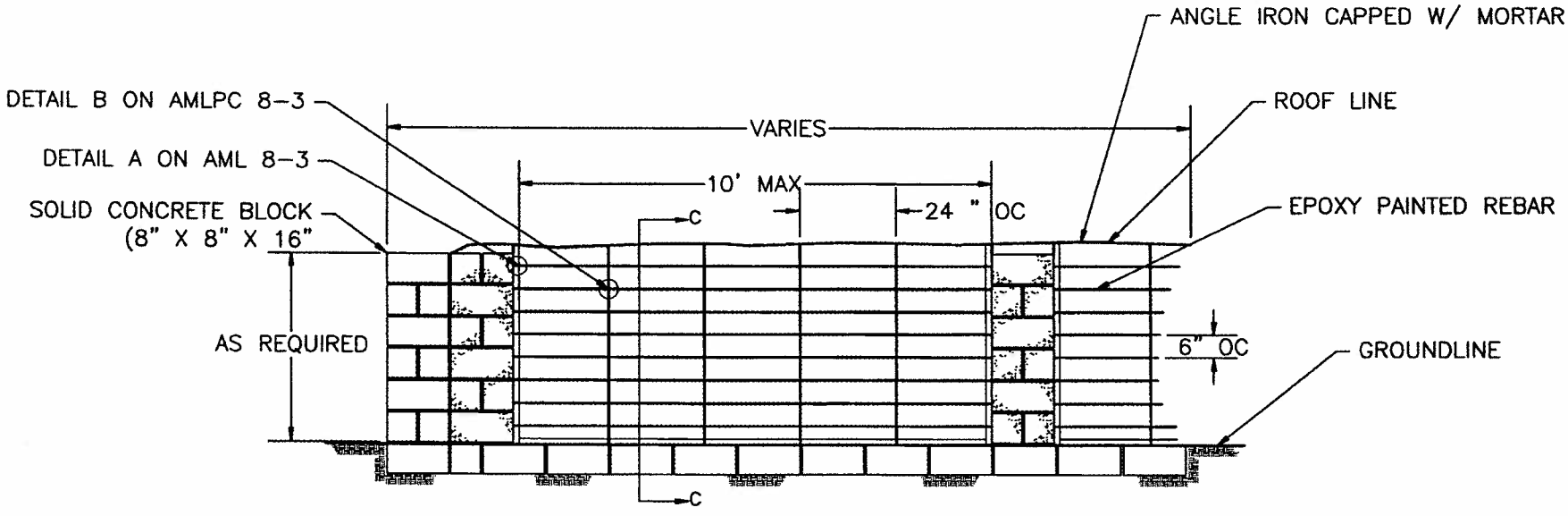
POLYURETHANE FOAM NOTES:

1. IN ORDER TO CONFINE THE FOAM INSIDE THE ADIT, SUCCESSIVE LAYERS OF TEMPORARY BARRIERS SHALL BE INSTALLED INSIDE THE ADIT PRIOR TO CONSTRUCTION OF THE EARTH PLUG.
2. REAR FOAM BARRIERS SHALL BE CONSTRUCTED FROM COMMON MATERIALS OR SHALL BE COMPRISED OF BAGGED FOAM PLACED IN LAYERS AND ALLOWED TO PARTIALLY HARDEN. THE VOID IN FRONT OF EACH SUCCESSIVE LAYER SHALL THEN BE FILLED WITH FOAM.
3. THE FOAM SEAL SHALL BE TIGHT ENOUGH TO SECURE THE ADIT, BUT IT DOES NOT HAVE TO BE AIR TIGHT.
4. FLAMMABLE TEMPORARY BARRIER MATERIALS SHALL BE REMOVED FROM THE FRONT BARRIERS AFTER THE ENTIRE FOAM SEAL HAS HARDENED.
5. THE FOAM SEAL SHALL BE PROTECTED FROM DEGRADATION FROM THE EFFECTS OF ULTRA-VIOLET LIGHT AND FIRE BY CONSTRUCTION AN OUTER PLUG OF EARTH NO LESS THAN 2' MINIMUM EARTH MATERIALS/AGGREGATE OR 1' MINIMUM OF CONCRETE GROUT COMBINED WITH COBBLES OR BOULDERS.
6. THE CONTRACTOR MAY, W/ PERMISSION OF THE ENGINEER, SUBSTITUTE CONSTRUCTED BULKHEADS WITH LOCAL OR COMMON MATERIALS.
7. SEE ADIT CLOSURE SPECIFICATIONS FOR DEPTH OF FOAM
8. FOR NON WILDLIFE ACCESSIBLE CLOSURES, REPLACE 36" WILDLIFE CLOSURE WITH 6" HDPE PIPE WITH PEST SCREEN FOR DRAINAGE AND VENTING

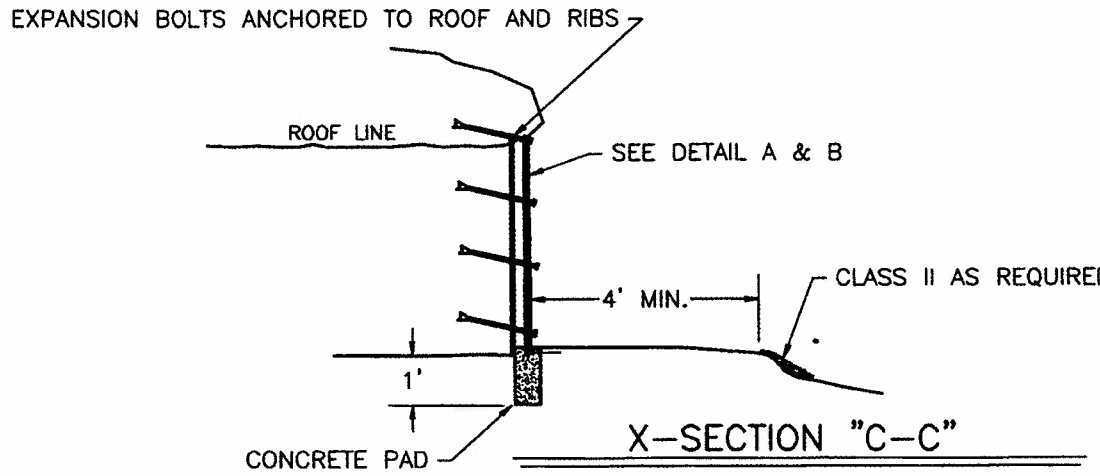
POLYURETHANE FOAM CLOSURE WITH WILDLIFE ACCESS
AMLPC 7

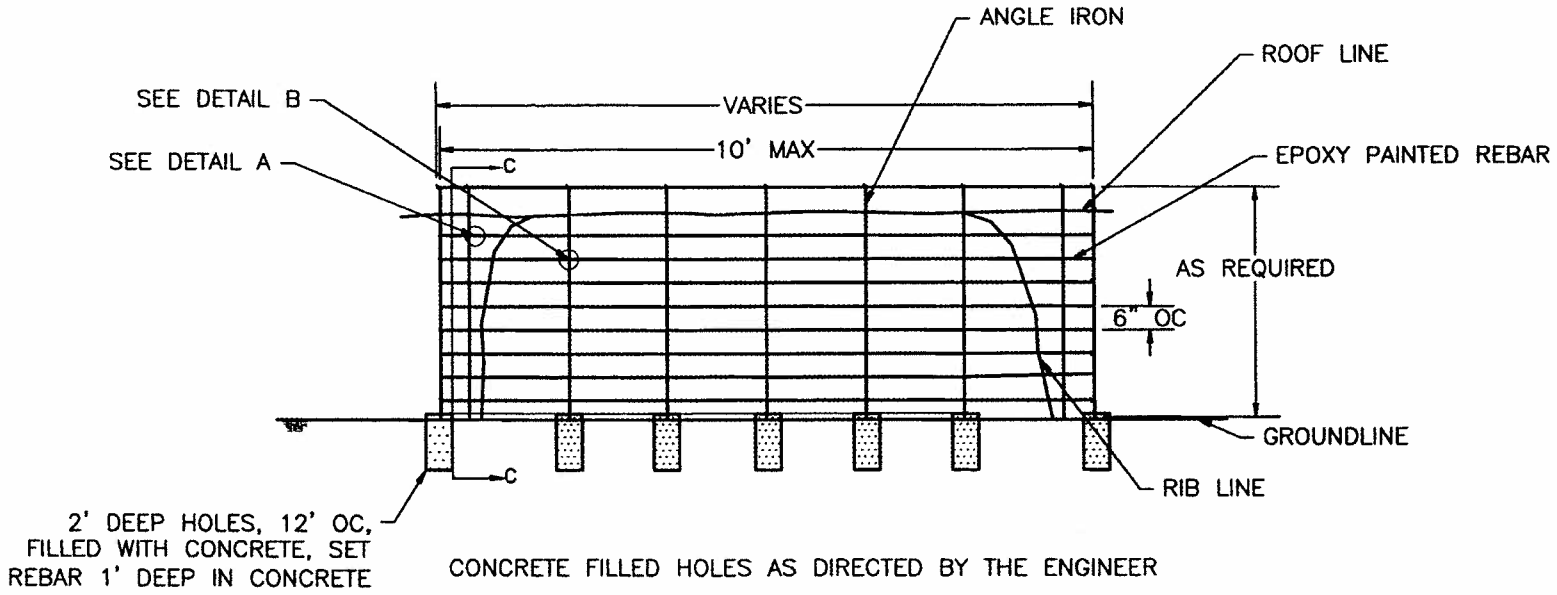


SECTION "C–C"



CLOSURE WITH EXTERIOR BARS IN CONCRETE BLOCK
AMLPC 8–1





CLOSURE WITH EXTERIOR BARS SET IN CONCRETE
AMLPC 8-2

NOTES:

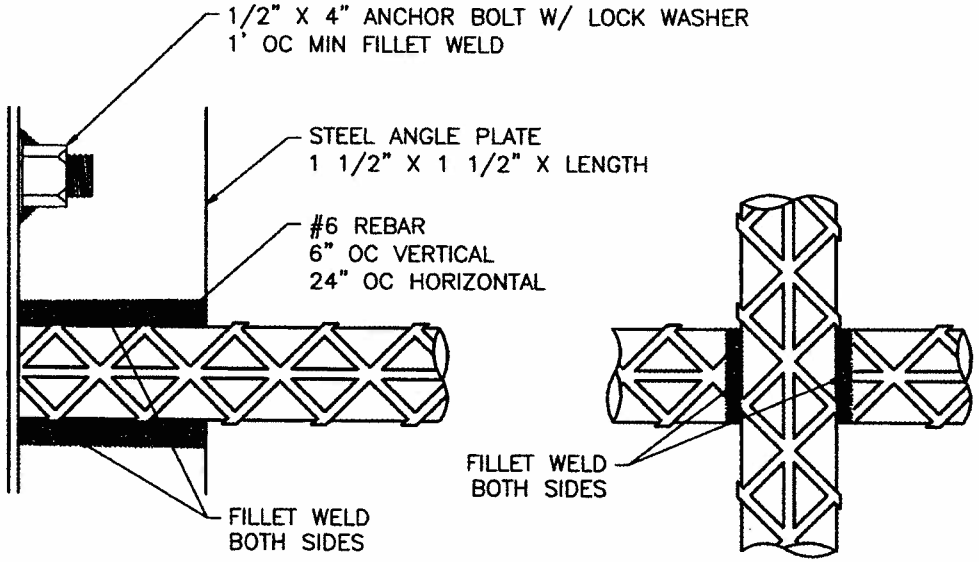
1. ALL EXTERIOR EXPOSED SURFACES OF BLOCK, CONCRETE, REBAR, AND METAL DOORS SHALL BE PAINTED BLACK OR BROWN SO AS TO BLEND WITH SURROUNDINGS. ALL WELDS AND EXPOSED METAL SURFACES SHALL BE PAINTED WITH RUST INHIBITING PAINT.

2. THE EXTERIOR CAGE CLOSURE SHALL BE UTILIZED WHERE SOLID AND STABLE FACE-UPS ARE PRESENT WHICH WILL ENSURE THE LONGEVITY OF THE CLOSURE.

3. THE CAGE SHALL BE ANCHORED INTO SOLID STRATA WITH EXPANSION BOLTS, GUY WIRE ANCHORS OR EQUIVALENT. ALL BOLTS AND NUTS SHALL BE SPOT WELDED TO PREVENT REMOVAL.

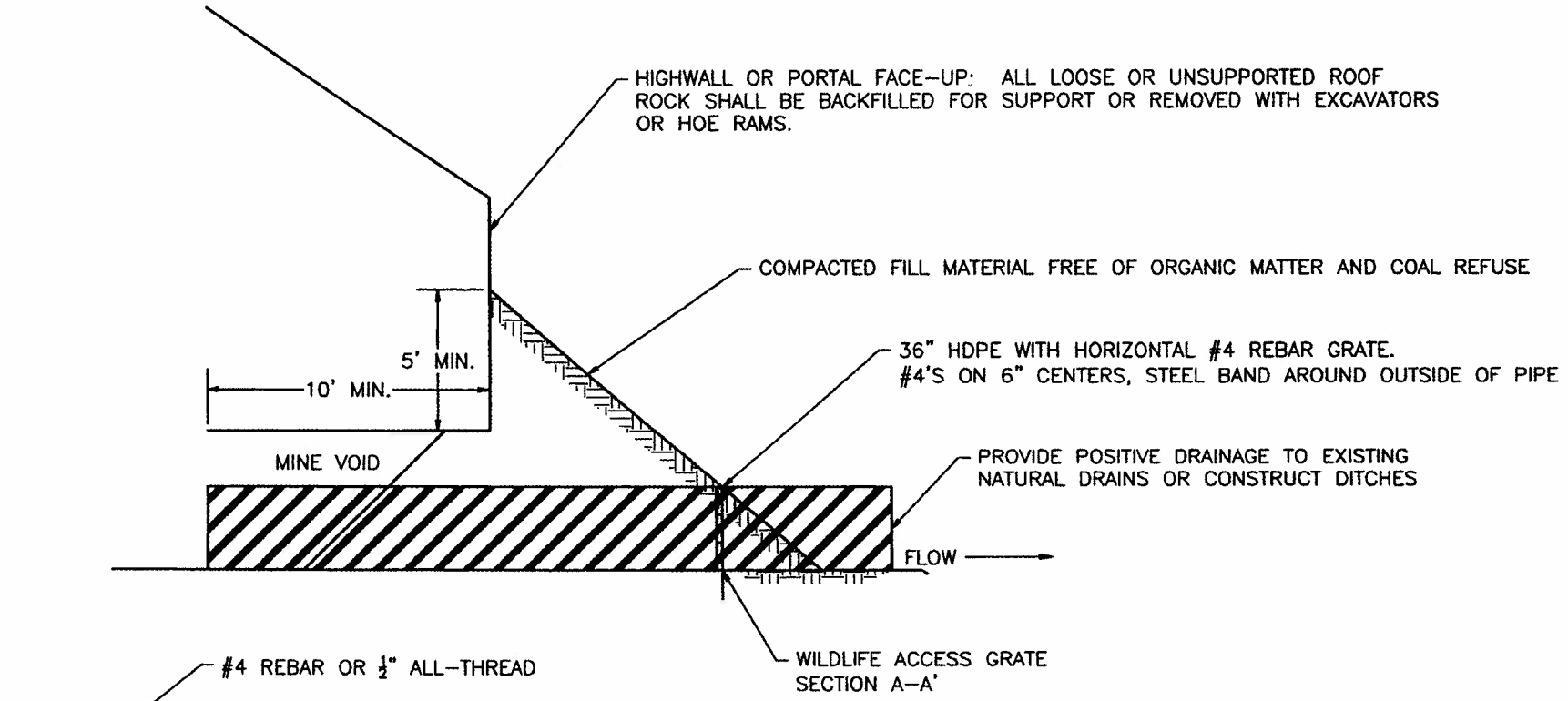
4. DANGEROUS ROOF ROCK MAY BE PRESENT AT ALL PORTALS. NO PERSONNEL SHALL BE ALLOWED BENEATH ANY PORTAL WITHOUT PROPER STRUCTURAL ROOF SUPPORT. IN MOST CASES, PROPER SUPPORT CANNOT BE PROVIDED AND NO PERSONNEL SHALL ENTER INTO ANY PORTAL.

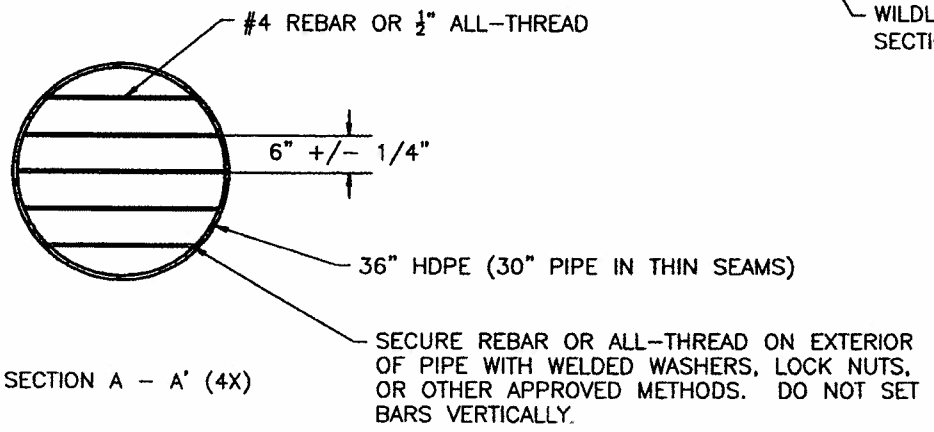
5. ALL OPENINGS SHALL BE A MAXIMUM OF 24" X 6".



DETAIL A **DETAIL B**

CLOSURE WITH EXTERIOR BARS DETAILS
AMLPC 8-3

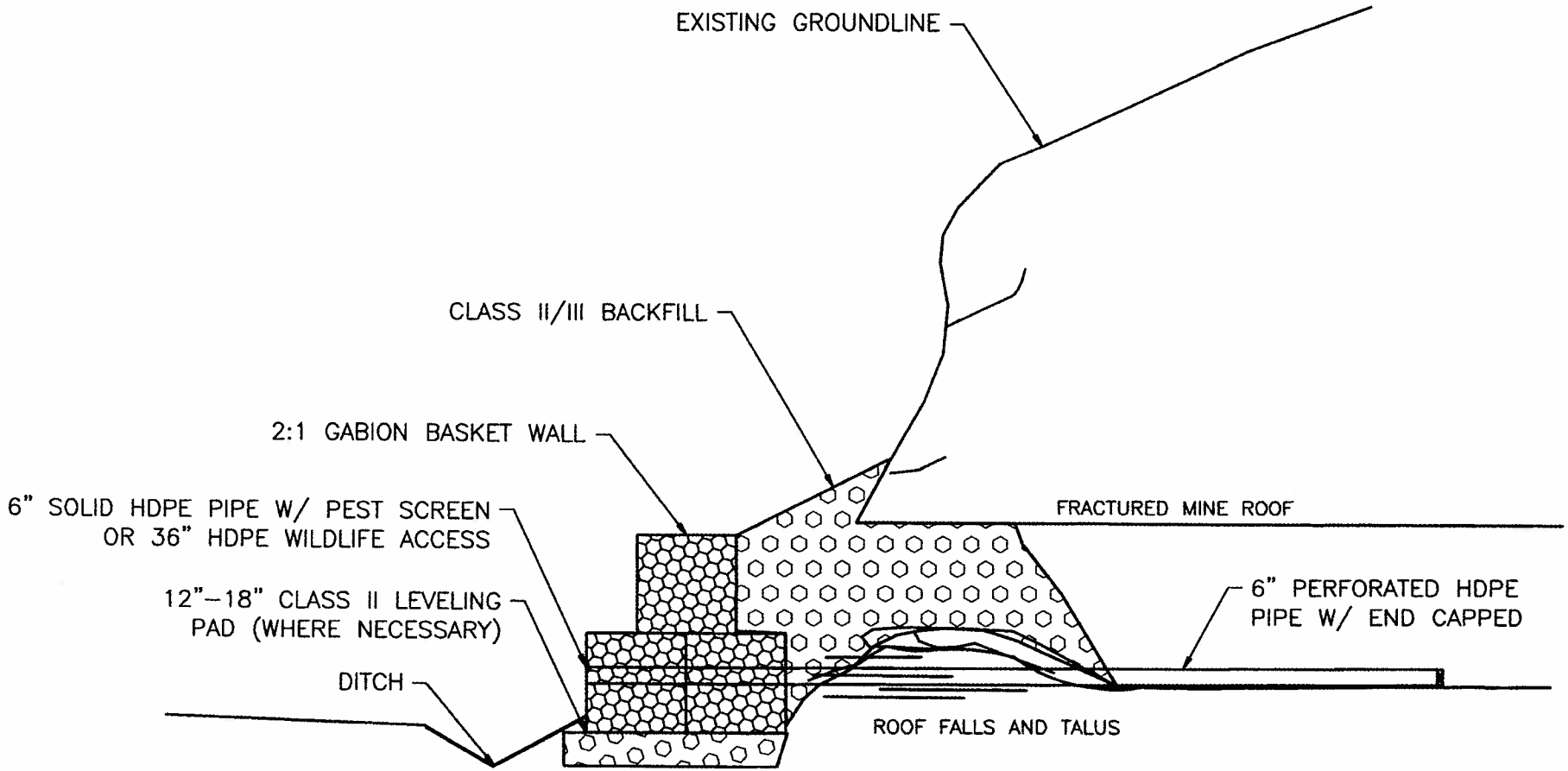




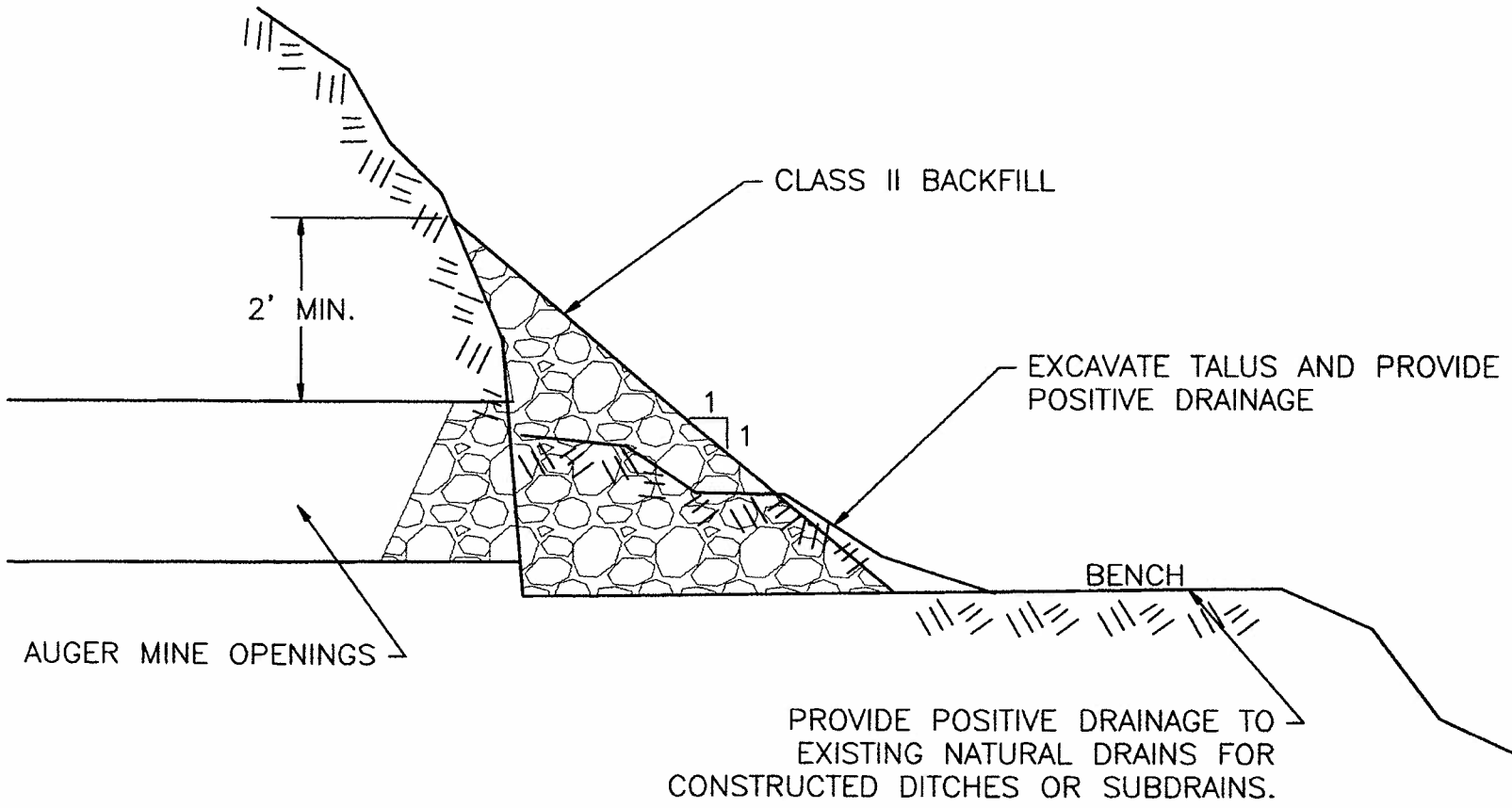
SECTION A – A' (4X)

REBAR SHALL BE SET BACK THE DISTANCE FROM THE END TWICE THE DIAMETER OF THE PIPE. E.G. 36" PIPE WOULD BE SETBACK 6' MIN. FROM THE END.

CLOSURE WITH WILDLIFE ACCESS PIPE
AMLPC 9

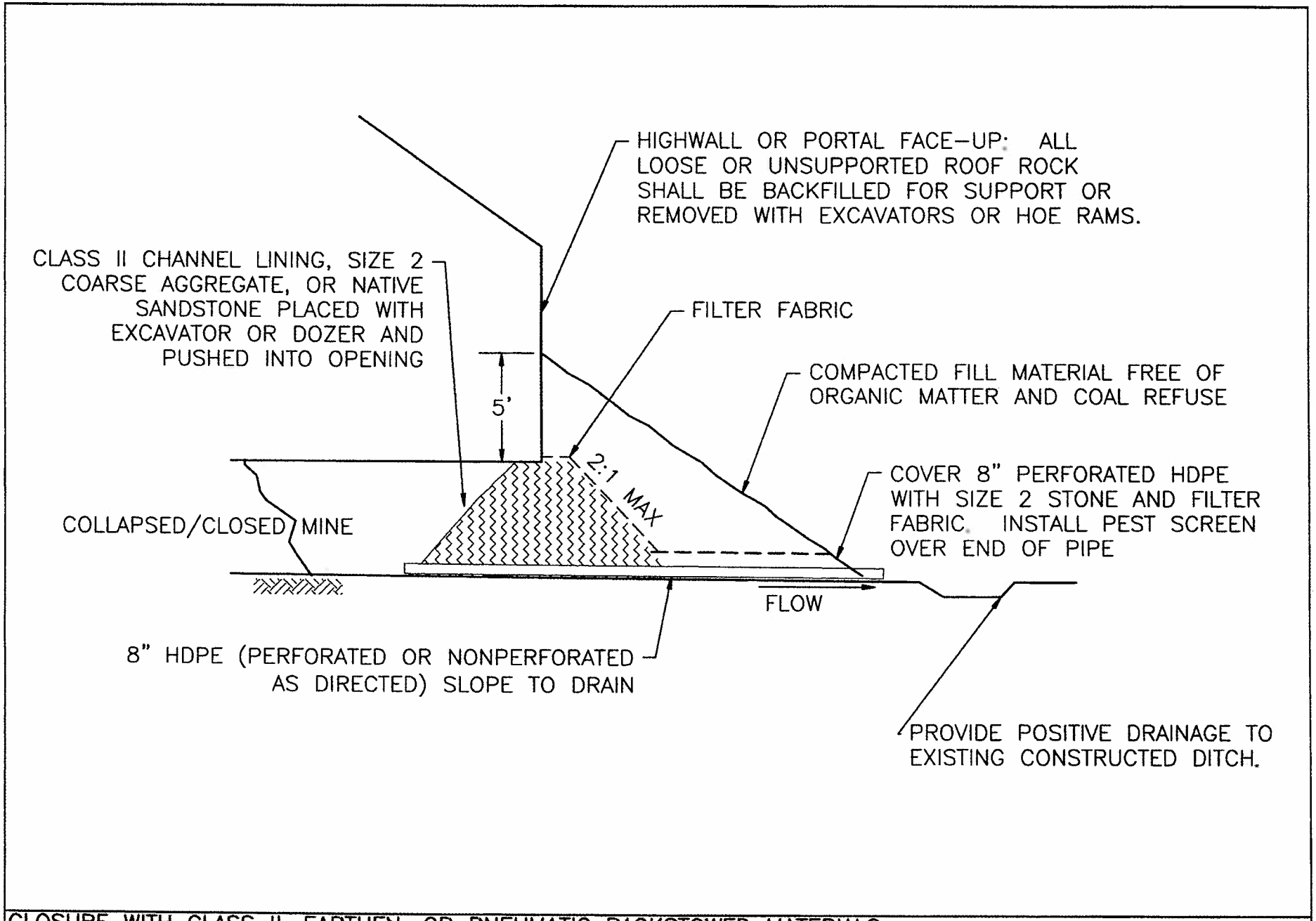


CLOSURE WITH GABION RETAINING WALL
AMLPC 10



NOTE:
PAYMENT FOR AUGER HOLE CLOSURES SHALL BE BY THE TON OF CLASS II BACKFILL. EXCAVATION SHALL BE CONSIDERED INCIDENTAL.

AUGER CLOSURE WITH CLASS II BACKFILL
AMLPC 11



CLOSURE WITH CLASS II, EARTHEN, OR PNEUMATIC BACKSTOWED MATERIALS
AMLPC 12

PORTAL CLOSURE DESIGN & SAFETY REQUIREMENTS NOTES:

1. EXCAVATION EFFORTS SHALL BEGIN AT THE TOP MOST OF EACH DESIGNATED PORTAL CLOSURE AND PROCEED INCREMENTALLY DOWNWARD UNTIL ALL OF THE MATERIAL HAS BEEN REMOVED DOWN TO GRADE. AS EXCAVATION WORK PROCEEDS, THE CONTRACTOR SHALL BE WATCHFUL FOR THE PRESENCE OF MINE WATER. ANY MINE WATER DETECTED, SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER AND EXCAVATION WORK HALTED UNTIL APPROVAL HAS BEEN GRANTED BY THE ENGINEER TO PROCEED FURTHER.

2. DANGEROUS ROOF ROCK MAY BE PRESENT AT ALL PORTALS. NO PERSONNEL SHALL BE ALLOWED BENEATH ANY PORTAL WITHOUT PROPER STRUCTURAL ROOF SUPPORT. IN MOST CASES, PROPER SUPPORT CANNOT BE PROVIDED AND NO PERSONNEL SHALL ENTER INTO ANY PORTAL.

3. BLACK DAMP OR OTHER DANGEROUS VENTILATION / GAS CONDITIONS MAY BE PRESENT. THE CONTRACTOR MUST TAKE EVERY PRECAUTION AND UTILIZE QUALIFIED PERSONNEL TO ENSURE THE SAFETY OF HIS WORKERS AND THE PUBLIC.

4. ALL PORTALS BEING USED AS A WATER SOURCE SHALL BE MAINTAINED AS A WATER SOURCE BY GROUTING TO CREATE A RESERVOIR IN THE MINE. AN END CAP WITH APPROPRIATE FITTINGS SHALL BE PLACED OVER THE END OF THE HDPE. PROVISIONS FOR A SUPPLY LINE OUTLET SHALL BE MADE IN THE POURED CONCRETE BASE AT A LOCATION DETERMINED BY THE ENGINEER.

5. ALL COARSE AGGREGATE, CLASS II, OR PNEUMATICALLY BACKSTOWED AGGREGATE SHALL BE INCIDENTAL TO THE PORTAL CLOSURE. GROUT SHALL BE USED TO SURFACE SEAL ALL SURFACES AS REQUIRED BY THE ENGINEER AND SHALL BE INCIDENTAL TO THE PORTAL CLOSURE.

6. ALL EXTERIOR EXPOSED SURFACES OF BLOCK, CONCRETE, REBAR, AND METAL DOORS SHALL BE PAINTED BLACK OR BROWN SO AS TO BLEND WITH SURROUNDINGS. ALL WELDS AND EXPOSED METAL SURFACES SHALL BE PAINTED WITH RUST INHIBITING PAINT.

7. IF ROOF LINE IS UNSTABLE THEN CAP REBAR WITH APPROPRIATE LENGTH OF 2 1/2" x 2" x 3/8" STEEL ANGLE AND FILL TO ROOF LINE WITH MORTAR.

8. THE ACCESS DOOR IS TO BE USED WHERE THE MINE IS A WATER SOURCE OR AS DIRECTED BY THE ENGINEER. DOOR SIZE MAY DEPEND ON SIZE OF MINE OPENING.

9. 8" DIAMETER HDPE PIPE SHALL BE USED UNLESS 12" IS REQUIRED BY THE ENGINEER.

10. A CONCRETE FOOTING SHALL BE CONSTRUCTED WHERE REQUIRED TO PROVIDE A SUITABLE LEVEL BASE FOR THE BLOCK WALL. CONCRETE SHALL BE 3000 PSI.

CLOSURE GENERAL NOTES
AMLPC 13